

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Movements of Vocal Cords

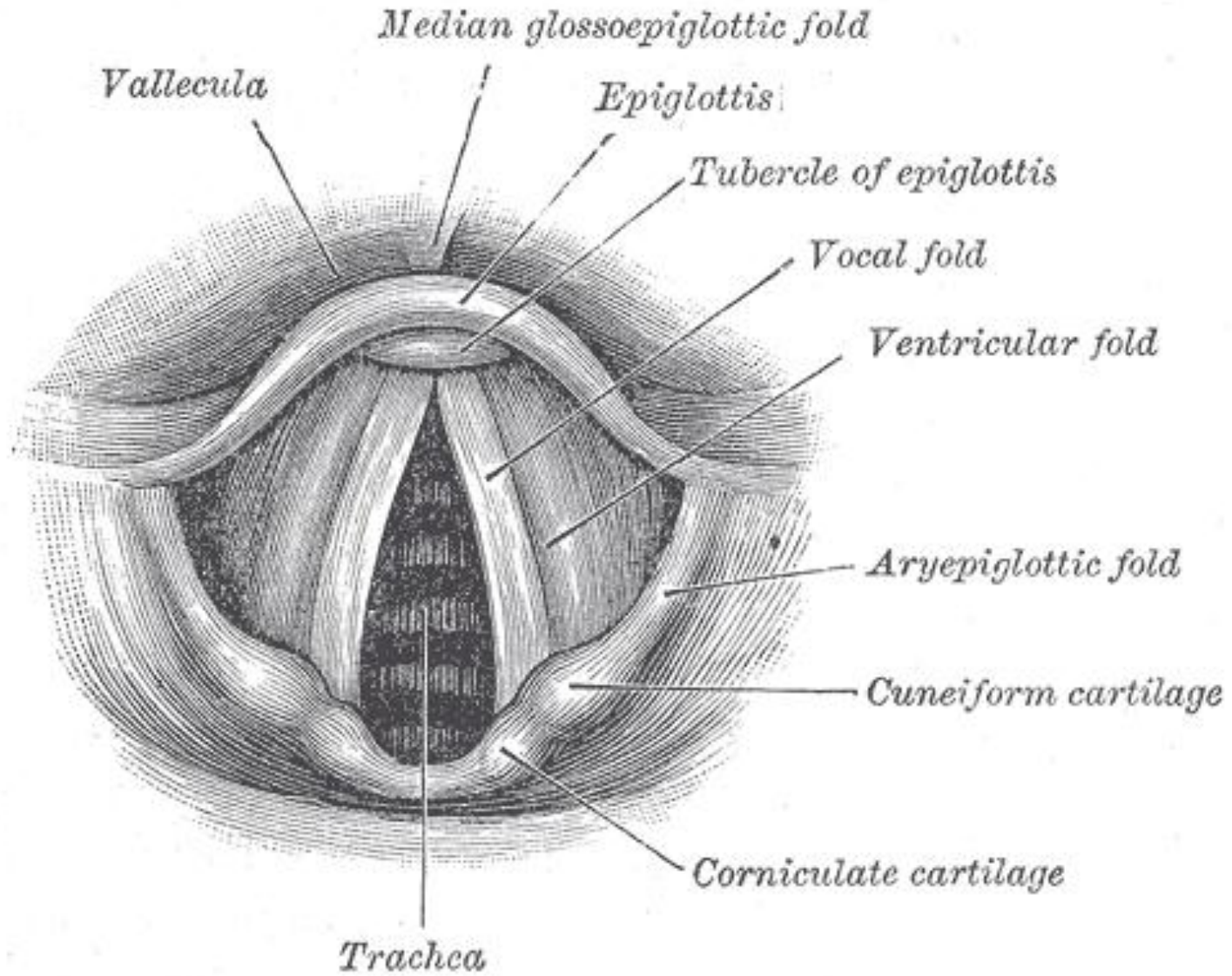
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Introduction

Vocal Folds:

These are two pearly white sharp bands extending from the middle of thyroid cartilage to the vocal processes of arytenoids.

Each vocal cord consists of a vocal ligament covered by closely bound mucus membrane with scanty subepithelial connective tissue.



Movements

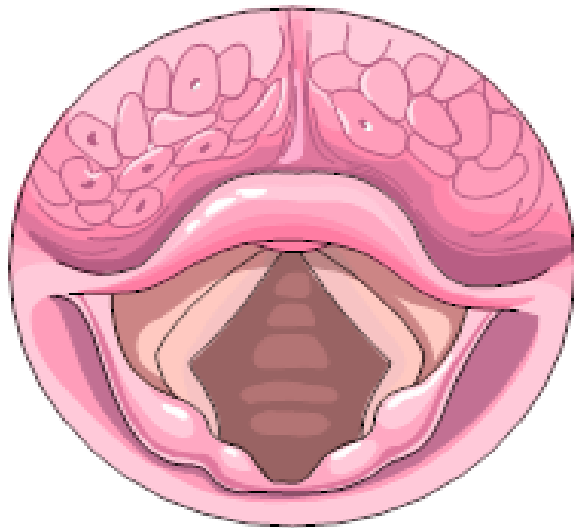
These include:

- > Abduction
- > Adduction
- > Tension
- > Relaxation

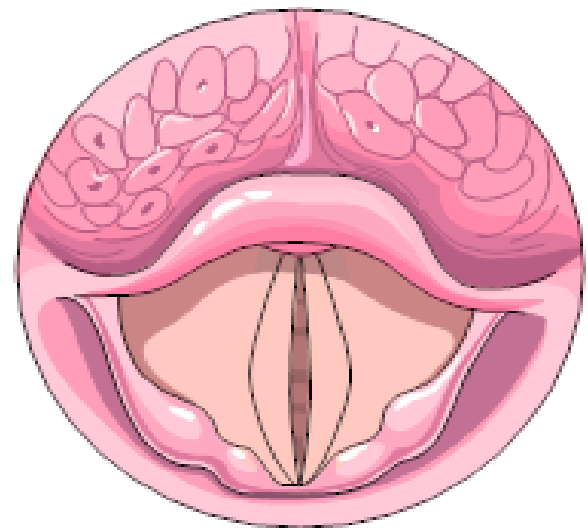
Muscles Responsible For Those Movements

- > **Abductor:**
Posterior cricoarytenoid
- > **Adductor:**
Lateral cricoarytenoid
Transverse cricoarytenoid
- > **Tensor:**
Cricothyroid
- > **Relaxor:**
Thyroarytenoid

Abducted



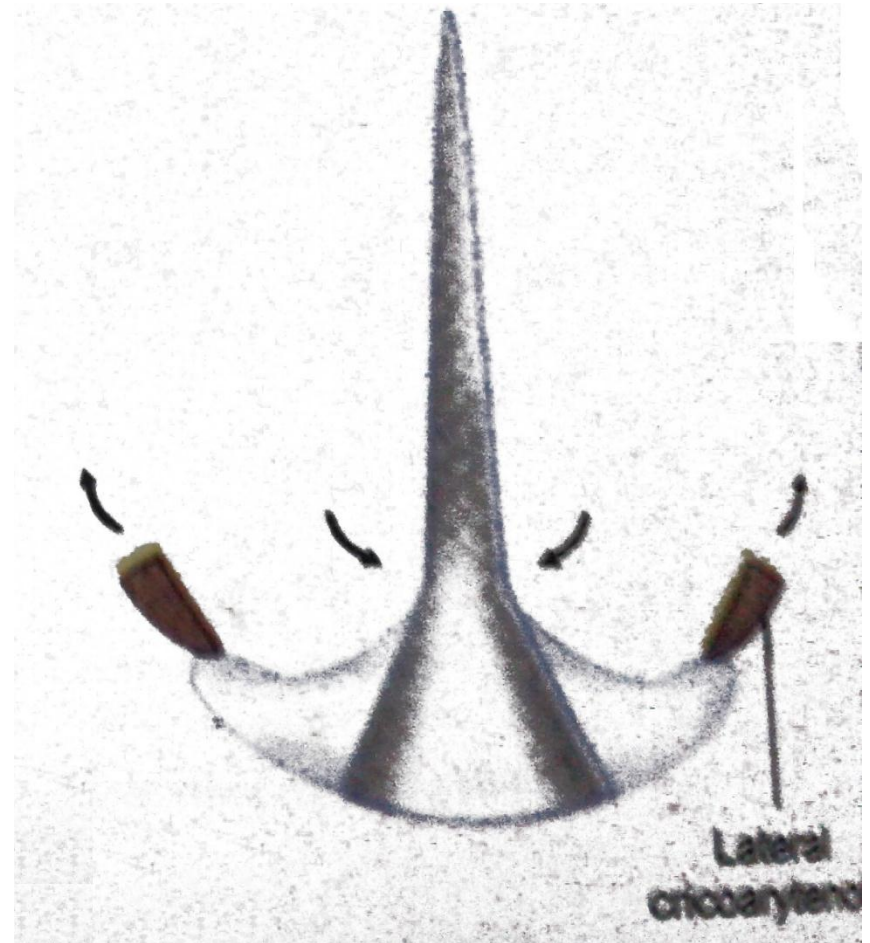
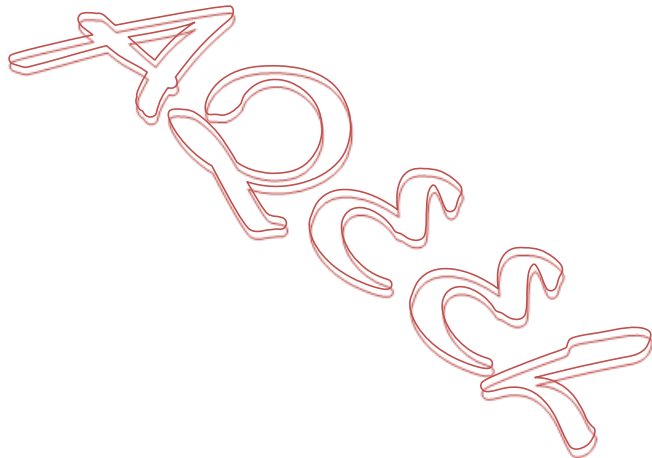
Adducted



Shape of Glottis During Various States

- During Strong Whisper:

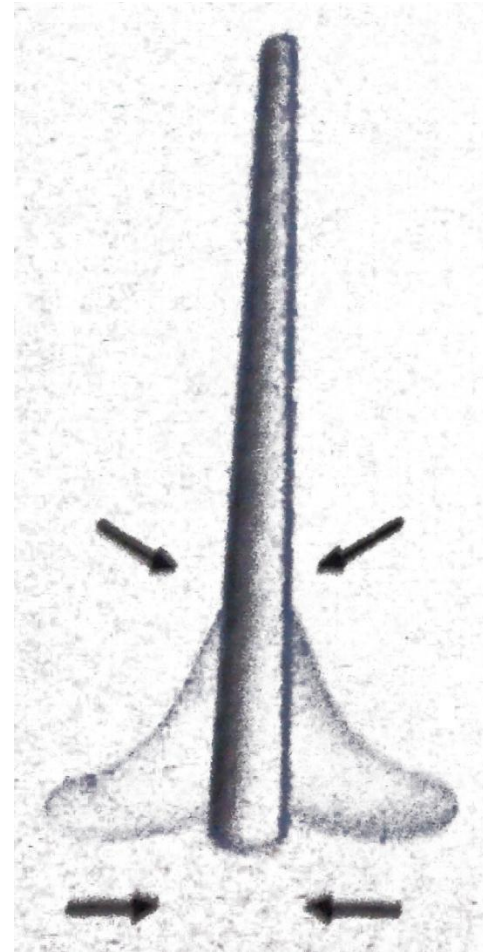
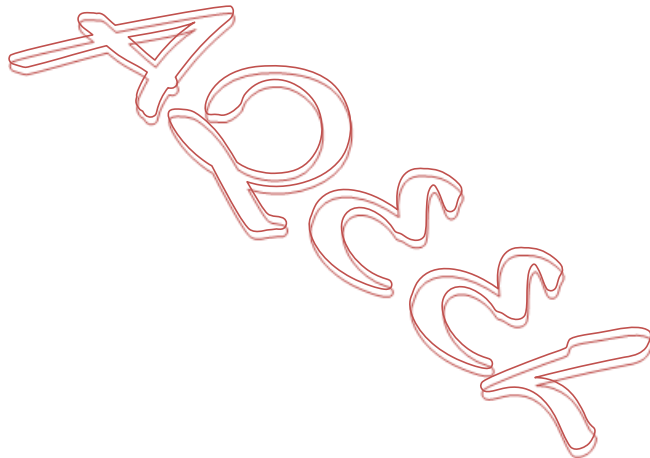
It looks like a *funnel* (with broad base lying posteriorly).



Shape of Glottis During Various States

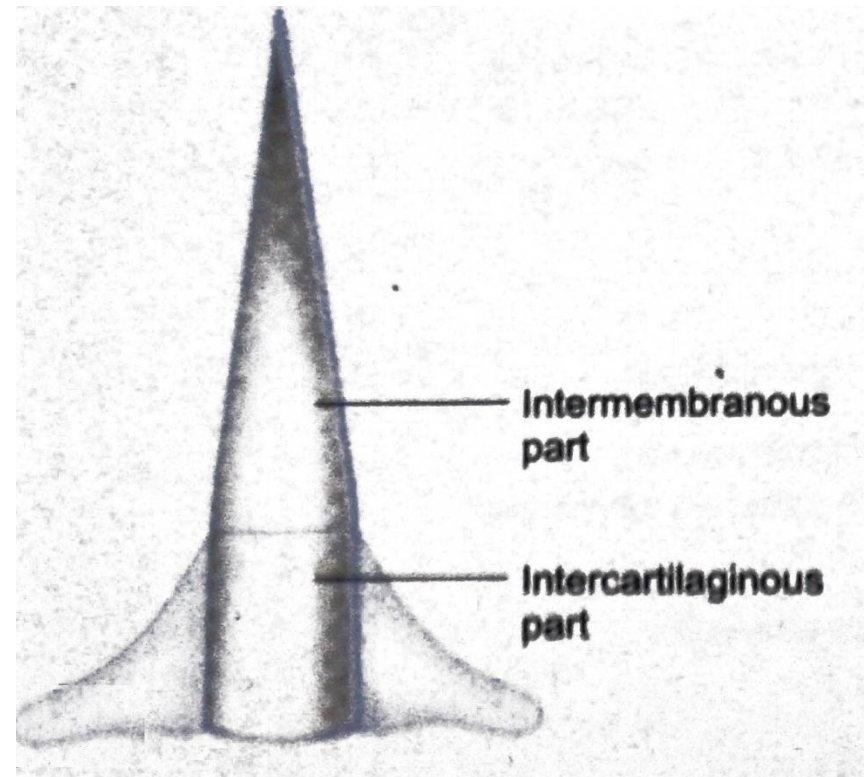
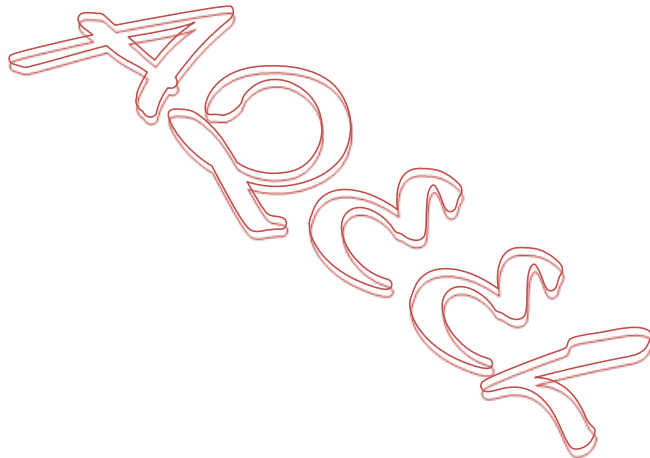
- During Phonation
(production of vocal
sounds):

Its shape is like a
linear chink.



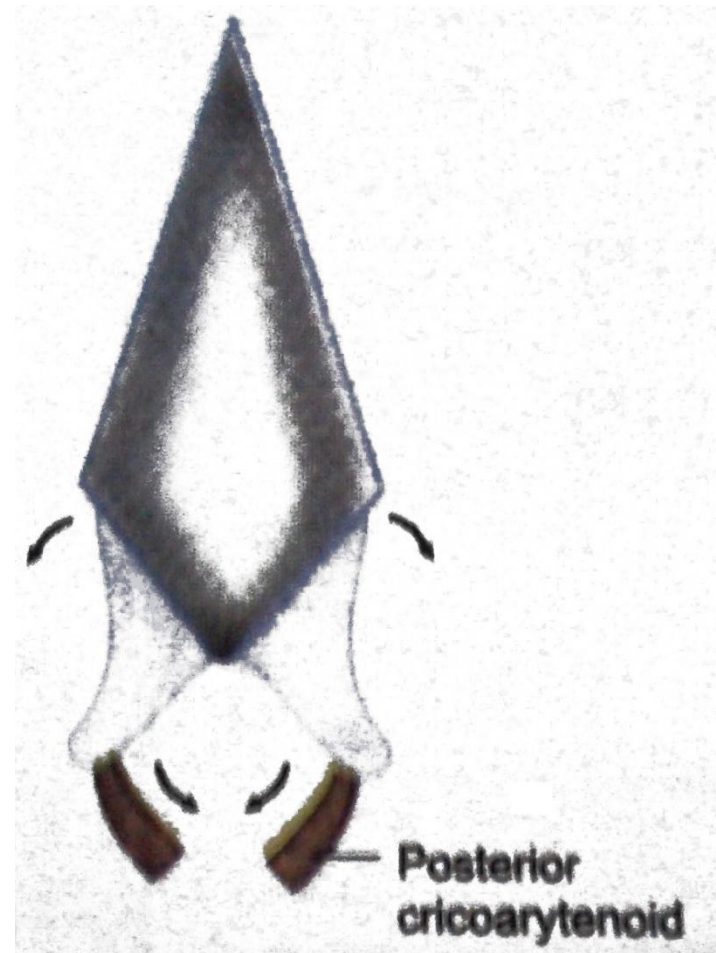
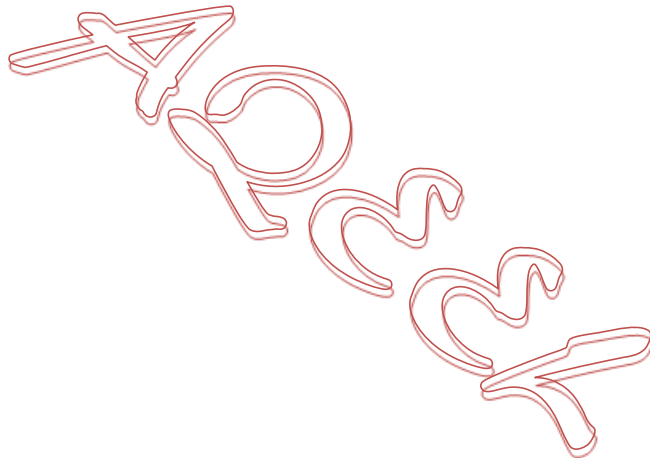
Shape of Glottis During Various States

- During Quiet Breathing (i.e condition of rest):
It appears to be a *pentagonal* slit.



Shape of Glottis During Various States

- During Forced Inspiration:
It assumes a shape like a *diamond*.

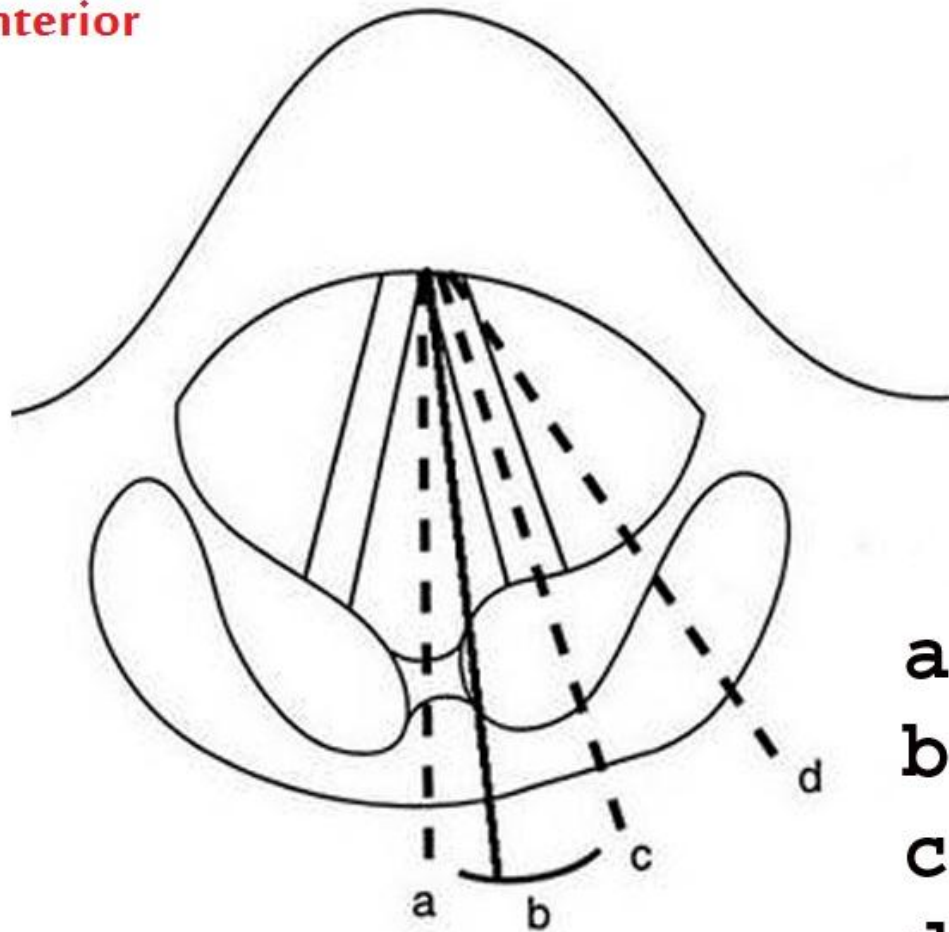


Positions of the Vocal Cords

- These include:
 - > Median
 - > Paramedian
 - > Intermediate (Cadaveric)
 - > Gentle abduction
 - > Full abduction

Positions of the Vocal Cords

Anterior



- a - Median
- b - Paramedian
- c - Cadaveric
- d - Abduction

Posterior

Median Vocal Cords

=> location of cord is in the **midline**

- **Physiological:**

- > phonation

- **Pathological:**

- > recurrent laryngeal nerve (RLN) paralysis

Paramedian Vocal Cords

=> location of cord is 1.5mm from midline

- **Physiological:**
 - > strong whisper
- **Pathological:**
 - > recurrent laryngeal nerve paralysis

Cadaveric Vocal Cords

=> location of cord is 3.5mm from midline

- **Pathological:**

- > paralysis of both recurrent laryngeal nerve and superior laryngeal nerves

Gently Abducted

=> location of cord is 7mm from midline

- **Physiological:**
 - > during quiet respiration
- **Pathological:**
 - > paralysis of adductors

Fully Abducted

=> location of cord is 9mm from midline

- **Physiological:**
 - > during deep inspiration
- **Pathological:**
 - > paralysis of adductors

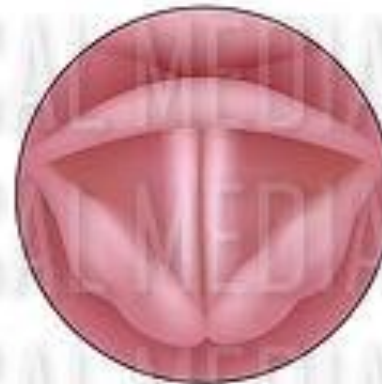
Vocal Fold Paralysis

Respiration

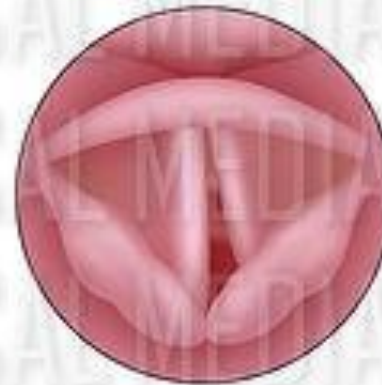
Phonation



Normal



Unilateral
paralysis



Bilateral
paralysis



Thanks!

AQEEL